

A NEW SUBSPECIES OF *IPOMOPSIS LONGIFLORA*  
(POLEMONIACEAE) FROM ARIZONA,  
NEW MEXICO, AND NORTHERN MEXICO

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ABSTRACT

*Ipomopsis longiflora* (Torr.) V. Grant subsp. **australis** Fletcher & W. L. Wagner is described from southwestern New Mexico and Arizona south and west of the Mogollon Rim. Short capsules, which do not or only slightly exceed the calyx, clearly separate subsp. *australis* from the typical subspecies, with its strongly exerted capsules.

The probable occurrence of this distinctive new species of *Ipomopsis longiflora* was first recognized by each of us during independent floristic studies in southwestern New Mexico. Recent investigations in the field and examination of available herbarium material have confirmed the existence of a new taxon, with a geographical range distinct from that of the typical form of *Ipomopsis longiflora*.

***Ipomopsis longiflora* (Torr.) V. Grant subsp. *australis* Fletcher & W. L. Wagner, subsp. nov.**

Differt a *I. longiflora* subsp. *australis* calyce 7–9 mm longo; capsulis maturis calyce longioribus vel paulo brevioribus (6–)8–9(–10) mm longo (Fig. 1).

Much branched annual or biennial, 1.7–6 dm tall from a taproot, the stem simple, branched above, subglabrous, erect. Leaves distant, 1.5–5 cm long, pinnatifid, linear, the upper ones sometimes entire, pubescent with short, crisped hairs, these varying in density but more prominent in the axils. Flowers in open corymbose panicles, the pedicels of mature flowers slender, mostly 10–20 mm long. Calyx 7–8.5(–10) mm long, dotted with short-stalked glands, united to well above the middle, the tube scarious below the sinuses, splitting in sinuses at maturity, the lobes subulate, spinulose at the apex, the margins with short, crisped hairs. Corolla pale blue to white, often fading to pale pink, salverform, the tube (25–)35–45 mm long, narrow, the lobes (6–)9–12.5 mm long. Stamens adnate to the tube, unevenly inserted with 2 or 3 of them slightly exerted. Stigmas

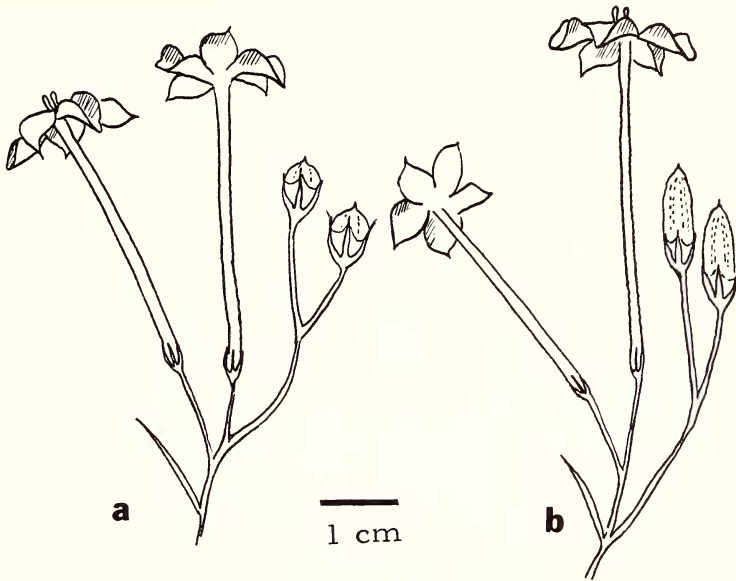


FIG. 1. Diagrammatic illustration showing the difference in capsule length between *Ipomopsis longiflora* subsp. *australis* (a) and subsp. *longiflora* (b).

somewhat exceeding the anthers. Capsule not or only slightly exceeding the calyx lobes, (6-)8-9(-10) mm long at maturity. Seeds several in each locule, angulate, viscid when wet.

TYPE: New Mexico, Catron Co., 0.4 km off Hwy. 180 on Rte. 519, 1.6 km s. of Pleasanton (SE¼, Sec 14, T12S, R20W), 1500 m, 10 Sep 1980, *R. Fletcher* 4886 (holotype: UNM-69975; isotypes: ARIZ, ASU, MO, NMC).

PARATYPES: MEXICO, Sonora, 9 mi from Magdalena, *Pinkava* 6485 (ASU). U.S.A., ARIZONA, Cochise Co., Rodeo, *Jones* 25667 (MO). Gila Co., s. of Seneca, *Schmidt* 34 (ARIZ). Graham Co., 20 mi e. of Safford, *Moeller* 10698 (ARIZ). Greenlee Co., 5 mi s. of Clifton, *Crosswhite & Sands* 808 (ASU). Maricopa Co., Mormon Flat, *Shreve* 10166 (ASU). Mohave Co., 4 mi n. of Peach Springs, *Darrow* 3141 (ARIZ). Pima Co., Santa Rita Mts., 1880, *Engelmann s.n.* (MO). Pinal Co., 9 mi w. of Oracle, *Wiegand & Upton* 3995 (MO). Santa Cruz Co., near Elgin, *Peebles et al.* 3338 (ARIZ). Yavapai Co., Montezuma Castle Nat'l. Monument, *Bomen* 26 (ARIZ). NEW MEXICO, Catron Co., 1 mi s. of Hwy. 180 at San Francisco River crossing, *Fletcher* 2665 (UNM). Grant Co., near Red Rock, *Thornber* 57 (NMC). Hidalgo Co., Peloncillo Mts., along Hwy. 80, 2 mi n. of the pass, *Wagner* 1898 (UNM). Luna Co., w. of Hermanas, *Clark* 10754 (UNM).

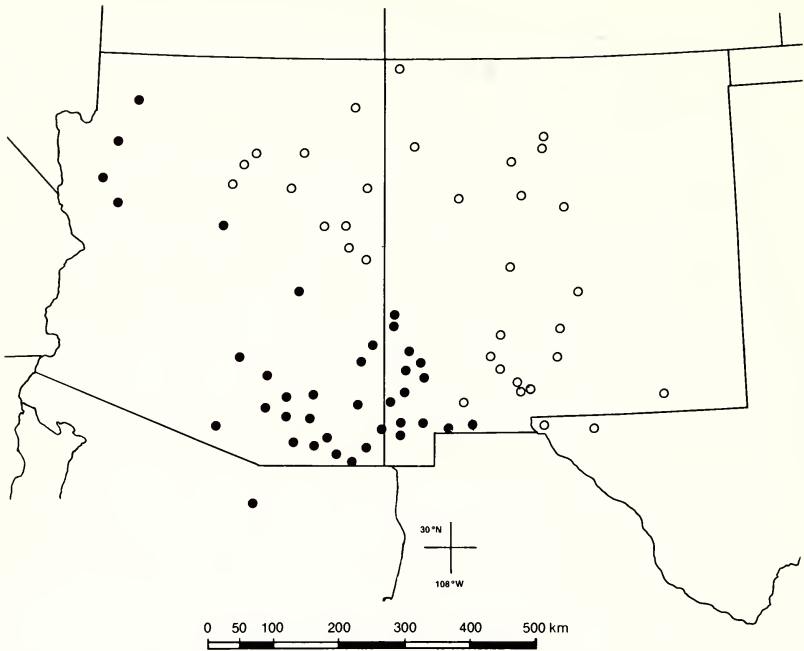


FIG. 2. Geographical distribution of *Ipomopsis longiflora* subsp. *australis* (dots) and of subsp. *longiflora* (open circles) adjacent to that of subsp. *australis*.

*Distribution.* In sandy soils in desert vegetation, in grasslands or in pinyon-juniper communities from Mohave Co., Arizona, south and west of the Mogollon Plateau, to southwestern New Mexico as far east as Deming, in Luna Co., and to northern Sonora and probably adjacent northern Chihuahua, Mexico, at elevations of 650–1850 m. Flowering from April to October, after rains (Fig. 2).

Plants of *Ipomopsis longiflora* subsp. *australis* are similar to those of subsp. *longiflora* in most features. They differ, however, in the length of the capsule and calyx, as well as in the degree to which the capsule is exerted beyond the calyx. In the typical subspecies, the capsule length ranges from 12–15 mm, with the calyx reaching approximately midway, whereas the capsules of subsp. *australis* are 6–9(–10) mm long and the calyx is of equal length or slightly shorter. In addition, the seeds of *Ipomopsis longiflora* subsp. *australis* are more plump than those of subsp. *longiflora*. There is also, in general, a lower density of glandular pubescence and a greater density of non-glandular hairs along the margins of the calyx in subsp. *australis* than in subsp. *longiflora*.

The ranges of the two subspecies are entirely distinct. In Arizona the two taxa occur on opposite sides of the Mogollon Plateau. Their

ranges come closer together in southwestern New Mexico. Here suitable habitats are intermittent rather than completely disjunct. Based on the study of herbarium material and field work done by Fletcher, it has been determined that the two taxa grow within a few km of each other in the vicinity of Deming, Luna Co., New Mexico, but as far as we know they are never sympatric. For example, *Ipomopsis longiflora* subsp. *longiflora* was observed growing near Deming and north of Deming, whereas subsp. *australis* is known from the south, near Columbus (1952, *Castetter s.n.*; UNM). There is one collection of subsp. *australis* made in 1895 (*Mulford 1019*; MO) that is labelled as coming from Deming, however, since this is an early collection the locality may only refer to the general area of Deming. Fieldwork, however, has failed to locate any populations of subsp. *australis* from Deming.

The two subspecies obviously share the same hawkmoth pollinators, but we have no information as to whether the taxa can hybridize. We have observed no plants that could be considered to exhibit an intermediate combination of characters.

#### ACKNOWLEDGMENTS

We thank John Dwyer for preparing the latin diagnosis and the curators of the following herbaria for loans of their material: ARIZ, ASU, MO, NMC, UNM.

(Received 14 May 82; accepted 18 Feb 83)

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#### MEETING NOTICE

The society for Economic Botany will hold its 25th annual meeting at Texas A&M University, College Station, Texas, 11-13 June, 1984. The symposium, ETHNOBOTANY OF THE GREATER SOUTHWEST, will focus on past, present, and future interactions between plants and man in the southwestern United States and northern Mexico. Symposium presentations and discussion will involve specialists from the United States and Mexico. Registration materials and information can be obtained from Dr. Hugh D. Wilson, Biology, Texas A&M University, College Station, TX 77843. Those wishing to contribute papers should contact Dr. Gregory Anderson, Biological Sciences Group, University of Connecticut, Storrs, CT 06268.